

HIERARCHICAL MATERIALS

ABSTRACT OF THE DISCLOSURE

[0035] A material and an article comprising the material are presented. The material comprises a plurality of structural components. The structural components are configured in a series of increasing structural component size classes. The series has a base unit size class and at least one modular size class, and a component of the at least one modular size class comprises a plurality of components of the next smaller size class in the series. The structural components of the base unit size class comprise at least one bulk phase, and the structural components are bonded together at interfaces. Mechanical damage originating within a modular size class structural component is energetically favored to propagate in a distributed fashion among the plurality of structural components contained within the modular size class structural component.